



The Printer Working Group

February 2018 Face to Face Plenary

February 7, 2018
Smith Kennedy, HP Inc.
PWG Chair



Plenary Agenda

- Administrivia
- PWG Workgroup Status
 - Imaging Device Security (IDS)
 - Internet Printing Protocol (IPP)
- Liaison Status
 - Trusted Computing Group (TCG)
 - Internet Engineering Task Force (IETF)
 - Mopria
 - America Makes & AMSC
 - ISO/IEC JTC 1 3D Printing and Scanning Study Group
 - ISO TC171 SC2
 - IEEE P3030
- Next Steps
 - Next PWG Face-to-Face Meetings



Administrivia

- Welcome and Introductions
- Confirm Minutes Taker
- Review PWG Patent Policy
- Agenda Overview
- 2017-2018 Membership
- PWG Officers



PWG IP Policy

- "This meeting is being held in accordance with the PWG Intellectual Property Policy"
 - http://www.pwg.org/chair/membership_docs/pwg-ip-policy.pdf
- TL;DR: Anything you say in a PWG meeting or email to a PWG address can be used in a PWG standard
 - (but please do read the IP policy above if you haven't done so)



PWG Patent Statement

- PWG standards may include the known use of essential patents and patent applications provided the PWG Chair receives assurance from the patent holder or applicant with respect to patents whose infringement is, or in the case of patent applications, potential future infringement the applicant asserts will be, unavoidable in a compliant implementation of either mandatory or optional portions of the standard. This assurance shall be provided without coercion.



PWG Patent Statement

- This assurance shall be either:
 - A general disclaimer to the effect that the patentee will not enforce any of its present or future patent(s) whose use would be required to implement either mandatory or optional portions of the proposed PWG standard against any person or entity complying with the standard; or
 - A statement that a license for such implementation will be made available without compensation or under reasonable rates, with reasonable terms and conditions that are demonstrably free of any unfair discrimination.



PWG Patent Statement

- The PWG is not in a position to give authoritative or comprehensive information about evidence, validity or scope of patents or similar rights, but it is desirable that any available information should be disclosed. Therefore, all PWG members shall, from the outset, draw PWG's attention to any relevant patents either their own or of other organizations including their Affiliates that are known to the PWG members or any of their Affiliates, although PWG is unable to verify the validity of any such information.

Inappropriate Topics for PWG WG Meetings



- Do Not Discuss:
 - The validity/essentiality of patents/patent claims
 - The cost of specific patent use
 - Licensing terms or conditions
 - Product pricing, territorial restrictions, or market share
 - Don't discuss ongoing litigation or threatened litigation

DO raise an objection if inappropriate topics are discussed



Face to Face Agenda Overview

(All times Pacific Standard Time)

Wednesday, February 7

9:00 – 10:30	PWG Plenary
10:30 – 11:30	IPP WG : Status, IPP 3D Liaison Discussion
11:30 – 12:00	Lunch / Break
12:00 – 2:00	IPP WG : OP GSoC, “IPP for Dummies”
2:00 – 2:15	Break
2:15 – 3:30	IPP WG : IPP Job Save Password

Thursday, February 8

9:00 – 12:00	IPP WG : IPP System Service
12:00 – 12:30	Lunch / Break
12:30 – 3:00	IPP WG : OAuth2 and IPP, IPP Authentication, Next Steps



2018 Membership

27 (26?) Members (26 (25?) Voting, 1 Non-Voting)

Apple	HP Inc.	Northlake	Tykodi Consulting Services LLC
Brother Industries	Intel	Oki Data	Xerox
Canon	Konica Minolta	Qualcomm	Y Soft
Conexant Systems	Kyocera Document Solutions Inc.	Ricoh	
Danny Brennan	Lexmark	Sharp Labs	
Epson	Meteor Network	Technical Interface Consulting (N-V)	
Fuji Xerox	Microsoft	Thinstream Technologies	
High North	MPI Tech	Toshiba America Business Solutions	



PWG Officers (2017-2019 Term)

- PWG Chair: Smith Kennedy, HP Inc.
- PWG Vice Chair: Alan Sukert, Xerox
- PWG Secretary: Ira McDonald, High North



IPP Everywhere™ Certification Status

- IPP Everywhere™ Self Certification 1.0 Update 2
→ Now Available!
- 206 Printers now certified!
 - <https://www.pwg.org/dynamo/eveprinters.php>
 - More believed to be on the way
- IPP Everywhere™ Self Certification 1.1 – Q2 2018



Github Organization and Repositories

- Github PWG organization account:
 - <https://github.com/istopwg>
- IPP Sample
 - <https://github.com/istopwg/ippsample>
- IPP Everywhere Self Certification Tools
 - <https://github.com/istopwg/ippeveselfcert>
- IPP Registry
 - <https://github.com/istopwg/ippregistry>
- Semantic Model Repository
 - <https://github.com/istopwg/pwg-semantic-model>
- Web site repository:
 - <https://github.com/istopwg/website>

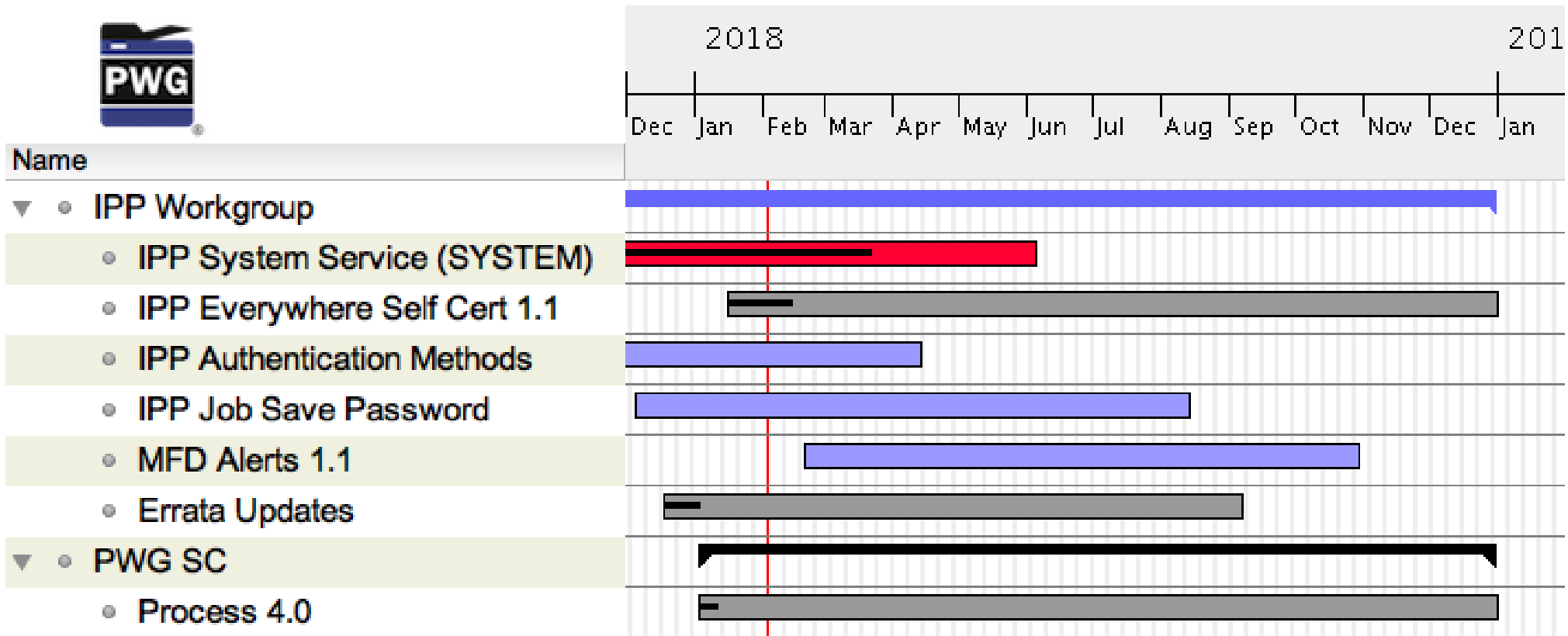


The Printer Working Group

Workgroup Status



PWG Work In Progress



Planned

Interim

Prototype

Prototyped

Stable



The Printer Working Group

IDS Workgroup Status

Alan Sukert (Xerox)



IDS: Original Charter

- Investigate and define standards for addressing general security attributes for imaging devices and services. Our general goals are to:
 - Define standard metrics and protocol bindings to assess the health of Hardcopy Devices to gauge if they should be granted access to a network.
 - Define a set of standard security and policy attributes and values for authorizing Hard Copy Devices, their services and users in a global workspace
 - Provide a general security model for other PWG standards to reference
- Provide a path for vendors to review and contribute to the definition of Common Criteria HCD Protection Profiles



IDS: Current Status

- Focus now is on Common Criteria HCD Protection Profiles
 - IDS Charter updated to focus the IDS WG on outreach with other standards bodies involved in HCD security issues.
 - Need to determine other applicable standards bodies that IDS WG could/should outreach with
 - HCD Technical Committee (TC) Meetings:
 - HCD TC Face-to-Face Meeting tentatively at upcoming CCUF Workshop Apr 24-26 in Trondheim Norway
 - Trying to schedule an additional HCD TC Meeting in conjunction with ICMC in Ottawa, May 9-11 (probably May 8th)
 - Will hold a HCD TC Teleconference in March – date TBD



The Printer Working Group

IPP Workgroup Status

Ira McDonald (High North)

Paul Tykodi (TCS)



IPP WG Charter

- Current charter:
 - <http://ftp.pwg.org/pub/pwg/ipp/charter/ch-ipp-charter-20170615.pdf>
- The Internet Printing Protocol (IPP) workgroup is chartered with the maintenance of IPP, the IETF IPP registry, and support for new clients, network architectures (Cloud, SDN), service bindings for MFDs and Imaging Systems, and emerging technologies such as 3D Printing
- In addition, we maintain the IETF Finisher MIB, Job MIB, and Printer MIB registries, and handle synchronization with changes in IPP



IPP WG Officers

- IPP WG Co-Chairs:
 - Paul Tykodi (TCS)
 - Ira McDonald (High North)
- IPP WG Secretary:
 - Michael Sweet (Apple)
- IPP WG Document Editors:
 - Ira McDonald (High North) – IPP System Service (SYSTEM)
 - Michael Sweet (Apple) – IPP System Service (SYSTEM)
 - Smith Kennedy (HP Inc.) – Various white papers



IPP WG Status (1/3)

- PWG Specifications in development:
 - IPP System Service v1.0 (SYSTEM) - Prototype Draft

- IPP Registration Documents in development:
 - IPP Authentication Methods - Interim Draft
 - IPP Job Save Password - Interim Draft



IPP WG Status (2/3)

- Recent IPP WG Approved Documents:
 - "IPP Get-User-Printer-Attributes" Registration
 - "IPP Presets" Registration
 - "Supporting Multi-Purpose Trays" Best Practice

- Recent PWG Approved Documents:
 - PWG 3D Print Job Ticket and Associated Capabilities v1.0 (PJT3D)
 - PWG 5100.1-2017: IPP Finishings 2.1 (FIN)
 - PWG 5100.21-2017: IPP 3D Printing Extensions v1.0 (3D)

- Recent IETF RFCs:
 - RFC 8010: Internet Printing Protocol/1.1: Encoding and Transport
 - RFC 8011: Internet Printing Protocol/1.1: Model and Semantics



IPP WG Status (3/3)

- Up-to-date pending IANA registrations online:
 - <http://www.pwg.org/ipp/ipp-registrations.xml>
 - Continue to maintain this in parallel for new specifications
 - Github repository: <https://github.com/istopwg/ippregistry>
- IPP Everywhere Printer Self-Certifications:
 - <https://www.pwg.org/printers>
 - 206 printers currently listed (more than doubled since August 2017)
 - Second 1.0 self-certification tools update released in October 2017
- IPP Sample Code:
 - Github repository: <https://github.com/istopwg/ippsample>
 - Fork of CUPS code includes ipppfind, ippproxy, ipppserver, ippptool, ippptransform, and ippptransform3d



IPP WG: More Information

- We welcome participation from all interested parties
- IPP Working Group web page
 - <http://www.pwg.org/ipp/index.html>
- Subscribe to the IPP mailing list
 - <https://www.pwg.org/mailman/listinfo/ipp>
- IPP WG holds bi-weekly phone conferences announced on the IPP mailing list
 - Next conference calls scheduled for Thursday, February 15, 2018 and March 1, 2018 at 3pm ET



The Printer Working Group

Liaison Status



Trusted Computing Group (TCG)

- **Next TCG Members Meetings**

- 26 February – 1 March 2018 – Portland, OR – Ira to call in
- 18-22 June 2018 – San Diego, CA – Ira to call in (conflicts w/ ESCAR)

- **Trusted Mobility Solutions (TMS)** – Ira is co-chair and co-editor

- Scope: enterprise, medical, banking, virtualization, mobile mgmt
- Formal – ATIS (in progress), ETSI (NFV), Global Platform (TEE and SE), OMA (device mgmt), Mobey Forum (mobile banking)
- Informal – 3GPP, ITU-T, SAE, IETF TLS, IETF SACM, US NIST

- **Mobile Platform (MPWG)** – Ira is co-editor

- Scope: mobile phones, PDAs, eBook readers, etc.
- Formal liaisons – Global Platform (TEE), Mobey Forum (banking)
- Mobile Runtime Integrity Preservation – public review in Q1 2018

- **Recent Specifications**

- <http://www.trustedcomputinggroup.org/resources>
- TCG Guidance Securing Network Equipment – published January 2018
- TCG TMS Use Cases v2 – public review January 2018
- TCG Trusted Software Stack (all specs) – public review January 2018
- TCG TPM 2.0 Automotive Thin v1.1 – public review January 2018
- TCG TNC Architecture 2.0 – published November 2017



Internet Engineering Task Force (IETF)

- **Next IETF Members Meetings**

- IETF 101 – 17-23 March 2018 – London, UK – Ira to call in
- IETF 102 - 14-20 July 2018 – Montreal, Canada – Ira to call in

- **Transport Layer Security (TLS)**

- TLS/1.3 – 3rd WG Last Call – IETF LC soon – draft-22 – November 2017
<https://datatracker.ietf.org/doc/draft-ietf-tls-tls13/>

- **Security Automation and Continuous Monitoring (SACM)**

- SACM WG – rechartered by IESG in January 2018
<https://datatracker.ietf.org/doc/charter-ietf-sacm/>
- SACM Endpoint Compliance Profile – draft-01 – January 2018
<https://datatracker.ietf.org/doc/draft-ietf-sacm-ecp/>
- S/W Inventory Message & Attributes for PA-TNC – draft-03 – January 2018
<https://datatracker.ietf.org/doc/draft-ietf-sacm-coswid/>
- Concise Software Identifiers – draft-03 – January 2018
<https://datatracker.ietf.org/doc/draft-ietf-sacm-coswid/>

- **Concise Binary Object Representation (CBOR)**

- Concise Binary Object Representation (CBOR) – draft-01 – October 2017
<https://datatracker.ietf.org/doc/draft-ietf-cbor-7049bis/>
- Concise Data Definition Language (CDDL) – draft-01 – January 2018
<https://datatracker.ietf.org/doc/draft-ietf-cbor-cddl> - JSON/CBOR schema

- **IRTF Crypto Forum Research Group (CFRG) – future algorithms**

- XMSS: Extended Hash-Based Signatures – draft-12 – January 2018
<https://datatracker.ietf.org/doc/draft-irtf-cfrg-xmss-hash-based-signatures/>



- PWG Chair presented “The Internet Printing Protocol in 2017: An Overview” to Mopria Technical Working Group via GoToMeeting July 26 during their F2F meeting session
 - <https://ftp.pwg.org/pub/pwg/general/presentations/PWG-2017-IPP-Overview-20170725.pdf>
 - Articulates the breadth of PWG IPP technologies currently approved and in active development
 - Reception seemed to be positive
 - No updates or interaction since last summer

America Makes & ANSI Additive Manufacturing Standardization Collaborative (AMSC)



- **America Makes – Quoted From their web site:**

- *"Established in 2012 and based in Youngstown, Ohio, America Makes is the flagship Institute for Manufacturing USA, the National Network for Manufacturing Innovation, infrastructure of up to 45 Institutes to follow and is driven by the [National Center for Defense Manufacturing and Machining \(NCDMM\)](#)."*
- America Makes is a membership driven public – private partnership. While it collaborates with SDO's (Standards Developing Organizations), it does not develop standards itself. Much of the information created as part of different America Makes sponsored projects is only made available to paying members.
- America Makes & [ANSI Additive Manufacturing Standardization Collaborative \(AMSC\)](#)
 - The IEEE-ISTO Printer Working Group is participating in the AMSC initiative.

- **The AMSC Version 2.0 Work Effort is actively underway**



- **32nd Meeting of ISO/IEC JTC 1, 2-6 October 2017 in Vladivostok, Russia**
 - **“Resolution 11 – Establishment of JTC 1/WG 12 on 3D Printing and Scanning Contingent** upon approval of a relevant NWIP, JTC 1 establishes JTC 1 Working Group 12 on 3D Printing and Scanning with the following Terms of Reference:
 1. Serve as a focus of and proponent for JTC 1’s standardization program on 3D Printing and Scanning.
 2. Develop ICT related foundational standards for 3D Printing and Scanning upon which other standards can be developed.
 3. Develop other 3D Printing and Scanning standards that are built upon the foundational standards when relevant ISO and IEC committees that could address these standards do not exist or are unable to develop them.
 4. Identify gaps and opportunities in 3D Printing and Scanning standardization.
 5. Develop and maintain liaisons with all relevant ISO and IEC committees as well as with external organizations that have interests in 3D Printing and Scanning.
 6. Engage with 3D Printing and Scanning communities to raise awareness of JTC 1 standardization efforts and provide an open platform for discussion and further cooperation.
 7. Develop and maintain a list of existing 3D Printing and Scanning standards produced and standards development projects underway in ISO TCs, IEC TCs and JTC 1.”

ISO/IEC JTC 1 3D Printing and Scanning Study Group (2/2)



- **32nd Meeting of ISO/IEC JTC 1, 2-6 October 2017 in Vladivostok, Russia - continued**
 - “JTC 1 appoints Byoung Nam Lee to serve as Convenor of JTC 1 Working Group 12 on 3D Printing and Scanning.
 - To continue to progress the topic of 3D Printing and Scanning in a timely manner, the Study Group on 3D Printing and Scanning will remain in place, with Byoung Nam Lee as Convenor, pending the approval of an NWIP. Once an NWIP has been approved, the Study Group on 3D Printing and Scanning is disbanded and the JTC 1 Working Group 12 Convenor will work with ITTF to formally establish Working Group 12 within the ISO system.”



Possible Collaboration with ISO TC171 SC2

- **Possible Opportunity to work with ISO TC171 SC 2 in collaboration with 3DPDF Consortium, ISO/IEC JTC 1 SG3, TC130 WG 2 TF 5, AMSC, ASME 14.41.1 work group, and US DoD/Supplier committee currently defining a Technical Data Package (TDP) Specification for interchange of files with 3D content**
 - Met with Martin Bailey (convener of TC130 WG 2 TF 5 effort) in June 2017 to discuss possible opportunity for collaboration and to share PWG 3D Print Ticket draft standard information
 - JDFMAP provides possible roadmap for future collaboration



Possible Collaboration with IEEE P3030

- **Possible Opportunity to work with IEEE P3030 Project (3D Consumer Printer Standardization Effort Sponsored by IEEE Consumer Electronics Society - <https://cesoc.ieee.org/>)**
 - IEEE CES is a completely different organization from the CES that sponsors the Consumer Electronics Show each year in Las Vegas
 - PWG participated remotely in first P3030 F2F meeting in early January 2018



The Printer Working Group

Next Steps



Next PWG Face to Face Meetings

2018 Meetings

- May 15 - 17 : Sunnyvale / San Jose area
 - Joint PWG/OpenPrinting summit
 - IEEE P3030 may have a meeting nearby or co-located with ours
- August xx – yy : East Coast? West coast? Virtual?
- November xx – yy : East Coast? West coast? Virtual?

Ideas for future meeting locations / dates?

→ Email chair@pwg.org

Congratulations to SpaceX for a Successful Launch of Falcon Heavy!



Questions / Comments / AOB

